AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (original) In a motor control system for an electrically powered motor having a motor control switch for switching power to the motor when in an 'On' position, the motor control system having a controller for controlling operation of the motor, a method for preventing startup of a motor when the motor is initially electrically connected to a power source with the motor control switch in the 'On' position, comprising:

determining with the controller whether the motor control switch is in the 'On" position when the motor is initially electrically connected to the power source; and

utilizing the controller to disable normal operation of the motor when the controller determines that the motor control switch is in the 'On' position when the motor is initially electrically connected to the power source.

2. (original) The method of claim 1, wherein utilizing the controller to disable normal operation of the motor comprises utilizing the controller to disable normal operation of the motor until the controller determines the On/Off switch is in an Off position.

3. (original) The method of claim 1, wherein utilizing a controller to determine the position of the motor control switch includes utilizing the controller to sense whether current is flowing through the motor.

4. (original) The method of claim 1, wherein utilizing a controller to determine the position of the motor control switch comprises utilizing the controller to sense whether a voltage is applied to the motor.

5. (original) The method of claim 1, wherein electrically connecting the motor to a power source comprises connecting the motor to an AC power source.

6. (original) The method of claim 5, wherein utilizing the controller to disable operation of the motor includes utilizing the controller to fire an electronic switch that couples the motor to a neutral of the AC power source at a low conduction angle such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

7. (original) The method of claim 5, wherein utilizing the controller to disable operation of the motor includes utilizing the controller to fire an electronic switch that couples the motor to a neutral of the AC power source at a low conduction angle when the motor is initially electrically connected to the AC power source such that power provided to the motor is insufficient for the motor to rotate, utilizing the controller to sense zero crossing of the AC power and upon sensing a zero crossing of the AC power, utilizing the controller to determine whether the motor control switch is in the 'On' position.

8. (original) The method of claim 7, wherein utilizing the controller to fire the electronic switch at the low conduction angle when the motor is initially electrically connected to the AC power source includes utilizing the controller to fire the electronic switch at the low conduction angle when the controller senses zero crossing of the AC power.

9. (original) The method of Claim 7, wherein utilizing the controller to disable normal operation of the motor comprises utilizing the controller to disable normal operation of the motor until the controller determines that the motor control switch is in an 'Off' position.

10. (original) The method of claim 1, wherein electrically connecting the motor to a power source comprises electrically connecting the motor to a DC power source.

11. (original) The method of Claim 10, wherein utilizing the controller to disable normal operation of the motor includes utilizing the controller to switch an electronic switch that couples the motor to a common of the DC power source at a narrow duty cycle when the motor is initially electrically connected to the DC power source, such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

12. (original) The method of Claim 10, wherein utilizing the controller to disable normal operation of the motor comprises utilizing the controller to disable normal operation of the motor until the controller determines the On/Off switch is in an 'Off' position.

13. (original) A system for preventing inadvertent startup of a motor when the motor is initially electrically connected to a power source while the motor is in an 'On' operational status, the system comprising:

a motor control switch coupled between the motor and a first side of an electrical power source that switches electrical power to the motor;

an electronic switch coupled between the motor and a second side of the electrical power source; and

a controller configured to determine a position of the motor control switch when the motor is initially connected to the power source and disabling normal operation of the motor if the motor control switch is in a position switching electrical power to the motor when the motor is initially connected to the power source.

14. (original) The system of Claim 13, further comprising a shunt resistor in series with the motor and the electrical power source, wherein to determine the position of the motor control switch, the controller is further configured to monitor voltage across the shunt resistor, thereby sensing whether current is flowing through the motor.

15. (original) The system of claim 14 wherein the shunt resistor is in series with the electronic switch and the second side of the electrical power source.

16. (original) The system of Claim 13, wherein to determine the position of the motor control switch, the controller is further configured to determine whether voltage is applied to the motor.

17. (original) The system of Claim 13, wherein the motor is electrically connected to an AC power source.

18. (original) The system of claim 17 wherein the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

19. (original) The system of claim 17 wherein the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is insufficient for the motor to rotate, the controller further configured to sense zero crossing of the AC power and upon sensing a zero crossing of the AC power, determining whether the motor control switch is in the 'On" position.

20. (original) The system of claim 19 wherein the controller is configured to fire the electronic switch at the low conduction angle when the motor is initially electrically connected to the AC power source by firing the electronic switch at the low conduction angle when the controller senses zero crossing of the AC power.

21. (original) The system of Claim 17, wherein the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be in a closed position switching power to the motor when the motor is initially connected to the AC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an OFF position where it is not switching electrical power to the motor.

22. (original) The system of Claim 13, wherein the motor is electrically connected to a DC power source.

23. (original) The system of claim 22 wherein the controller is further configured to switch the electronic switch at a narrow duty cycle when the motor is initially connected to the DC power source, such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

24. (original) The system of Claim 22, wherein the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be a closed position when the motor is initially connected to the DC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an open position.

25. (original) A power tool, comprising:

a motor circuit having an electric motor, an On/Off switch, and an electronic switch coupled in series between a hot side and a common side of an electric power source when the power tool is connected to the electrical power source ;

a controller electrically coupled to the motor circuit that senses whether the On/Off switch is in an 'On' position where it is switching electrical power to the motor when the power tool is initially connected to the electrical power source and disabling normal operation of the motor upon sensing that the On/Off switch is in the 'On' position when the power tool is initially connected to the electrical power source, the controller continuing to disable normal operation of the motor until the controller senses that the On/Off switch has been switched to an 'Off' position and operating the motor in normal operation once the On/Off switch is switched to the 'On' position after it has been switched to the 'Off' position.

26. (original) The power tool of claim 25 wherein the motor circuit includes a shunt resistor connected in series with the motor and the electrical power source, the controller electrically coupled to the shunt resistor and sensing whether current is flowing therethrough, the controller sensing that the On/Off switch is in the 'On' position upon sensing that current is flowing through the shunt resistor.

27. (original) The power tool of claim 26 wherein the electric power source is a source of AC power, the controller firing the electronic switch at a low conduction angle when the power tool is initially connected to the AC power source such that power provided to the motor is insufficient for the motor to function normally, the controller sensing zero crossing of the AC power once the power tool is initially connected to the AC power source and sensing whether current is flowing through the shunt resistor once it has sensed the zero crossing of the AC.

28. (original) The power tool of claim 27 wherein the controller fires the electronic switch at a low conduction angle such that the power provided to the motor is sufficient to make the motor hum but insufficient for the motor to rotate.

29. (original) The power tool of claim 27 wherein the controller fires the electronic switch at the low conduction angle upon sensing zero crossing of the AC power.

30. (original) The power tool of claim 26 wherein the electric power source is a source of DC power, the controller firing the electronic switch at a low duty cycle when the power tool is initially connected to the DC power source such that power provided to the motor is insufficient for the motor to function normally.

31. (original) The power tool of claim 30 wherein the controller fires the electronic switch at a low duty cycle such that the power provided to the motor is sufficient to make the motor hum but insufficient for the motor to rotate.

32. (original) The power tool of claim 26 wherein the motor control switch is coupled between a first side of the motor and the hot side of the electrical power, a first side of the electronic switch coupled to a second side of the motor and the shunt resistor coupling a second side of the electronic switch to the common side of the electrical power source.

33. (original) The power tool of claim 25 wherein the controller is electrically coupled to the motor circuit to sense whether voltage is applied to the motor when the power tool is initially connected to the source of electrical power and sensing whether the 'On/Off' switch is in the 'On' position upon sensing that voltage is applied to the motor.

34. (original) The power tool of claim 25 wherein the motor control switch is connected between a first side of the motor and the hot side of the electrical power source and the electronic switch is connected between a second side of the motor and the common side of the electrical power source, the controller electrically coupled to at least one of a junction between the first side of the motor and the motor control switch and a junction between the second side of the motor and the electronic switch.

35. (original) The power tool of claim 34 wherein the controller is electrically coupled to the at least one junction by an amplifier.

36. (original) The power tool of claim 34 wherein the controller is electrically coupled to the at least one junction by at least one resistor.

37. (original) The power tool of claim 34 wherein the electronic switch is coupled to the common side of the electric power source through a shunt resistor.

38. (original) The power tool of claim 34 wherein the electric power source is a source of AC power, the controller firing the electronic switch at a low conduction angle upon sensing that the On/Off switch is in the 'On' position when the power tool is initially connected to the AC power source such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

39. (original) The power tool of claim 34 wherein the electric power source is a source of DC power, the controller firing the electronic switch at a low duty cycle upon sensing that the On/Off switch is in the 'On' position when the power tool is initially connected to the DC power source such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

40. (original) A method of preventing inadvertent startup of a motor of a power tool when the power tool is initially connected to an electric power source, the motor connected in a motor circuit in series with an On/Off switch and an electronic switch, the method comprising sensing whether the On/Off switch is in an 'On' position when the power tool is initially connected to the electric power source and upon sensing that the On/Off switch is in the 'On' position when the power tool is initially connected to the electric power source, disabling normal operation of the motor until the On/Off switch is switched to an 'Off' position and operating the motor normally upon the On/Off switch being switched to the 'On' position after having been switched to the 'Off' position.

41. (original) The method of claim 40 wherein the power tool includes a controller electrically coupled to the motor circuit and sensing whether the 'On/Off' switch is in the 'On' position when the power tool is initially connected to the electric power sources includes utilizing the controller to sense whether at least one of current is flowing through the motor circuit and voltage is applied to the motor.

42. (new) In a motor control system for an electrically powered motor having a motor control switch for switching power to the motor when in an 'On' position, the motor control system having a controller for controlling operation of the motor, a method for preventing startup of a motor when the motor is initially electrically connected to a power source with the motor control switch in the 'On' position, comprising:

determining with the controller whether the motor control switch is in the 'On" position when the motor is initially electrically connected to the power source by utilizing the controller to sense whether a voltage is applied to the motor; and

utilizing the controller to disable normal operation of the motor when the controller determines that the motor control switch is in the 'On' position when the motor is initially electrically connected to the power source.

43. (new) The method of claim 42, wherein utilizing the controller to disable normal operation of the motor comprises utilizing the controller to disable normal operation of the motor until the controller determines the On/Off switch is in an Off position.

44. (new) The method of claim 42, wherein utilizing the controller to disable operation of the motor comprises:

connecting the motor to an AC power source; and

utilizing the controller to fire an electronic switch that couples the motor to a neutral of the AC power source at a low conduction angle such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

45. (new) The method of claim 42, wherein utilizing the controller to disable operation of the motor comprises:

connecting the motor to an AC power source; and

utilizing the controller to fire an electronic switch that couples the motor to a neutral of the AC power source at a low conduction angle when the motor is initially electrically connected to the AC power source such that power provided to the motor is insufficient for the motor to rotate, utilizing the controller to sense zero crossing of the AC power and upon sensing a zero crossing of the AC power, utilizing the controller to determine whether the motor control switch is in the 'On' position.

46. (new) The method of claim 45, wherein utilizing the controller to fire the electronic switch at the low conduction angle when the motor is initially electrically connected to the AC power source includes utilizing the controller to fire the electronic switch at the low conduction angle when the controller senses zero crossing of the AC power.

47. (new) The method of Claim 45, wherein utilizing the controller to disable normal operation of the motor comprises utilizing the controller to disable normal operation of the motor until the controller determines that the motor control switch is in an 'Off' position.

48. (new) The method of Claim 42, wherein utilizing the controller to disable normal operation of the motor comprises:

electrically connecting the motor to a DC power source; and

utilizing the controller to switch an electronic switch that couples the motor to a common of the DC power source at a narrow duty cycle when the motor is initially electrically connected to the DC power source, such that power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

49. (new) The method of Claim 42, wherein utilizing the controller to disable normal operation of the motor comprises:

electrically connecting the motor to a DC power source; and

utilizing the controller to disable normal operation of the motor until the controller determines the On/Off switch is in an 'Off' position.

50. (new) A system for preventing inadvertent startup of a motor when the motor is initially electrically connected to a power source while the motor is in an 'On' operational status, the system comprising:

a motor control switch coupled between the motor and a first side of an electrical power source that switches electrical power to the motor;

an electronic switch coupled between the motor and a second side of the electrical power source;

a controller configured to determine a position of the motor control switch when the motor is initially connected to the power source and disabling normal operation of the motor if the motor control switch is in a position switching electrical power to the motor when the motor is initially connected to the power source; and

a shunt resistor, wherein to determine the position of the motor control switch, the controller is further configured to monitor voltage across the shunt resistor, thereby sensing whether current is flowing through the motor.

51. (new) The system of Claim 50, wherein the motor is electrically connected to an AC power source and the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

52. (new) The system of claim 50 wherein the motor is electrically connected to an AC power source and the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is insufficient for the motor to rotate, the controller further configured to sense zero crossing of the AC power and upon sensing a zero crossing of the AC power, determining whether the motor control switch is in the 'On" position.

53. (new) The system of claim 52 wherein the controller is configured to fire the electronic switch at the low conduction angle when the motor is initially electrically connected to the AC power source by firing the electronic switch at the low conduction angle when the controller senses zero crossing of the AC power.

54. (new) The system of Claim 50, wherein the motor is electrically connected to an AC power source and the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be in a closed position switching power to the motor when the motor is initially connected to the AC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an OFF position where it is not switching electrical power to the motor.

55. (new) The system of Claim 50, wherein the motor is electrically connected to a DC power source and the controller is further configured to switch the electronic switch at a narrow duty cycle when the motor is initially connected to the DC power source, such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

56. (new) The system of Claim 50, wherein the motor is electrically connected to a DC power source and the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be a closed position when the motor is initially connected to the DC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an open position.

57. (new) A system for preventing inadvertent startup of a motor when the motor is initially electrically connected to a power source while the motor is in an 'On' operational status, the system comprising:

a motor control switch coupled between the motor and a first side of an electrical power source that switches electrical power to the motor;

an electronic switch coupled between the motor and a second side of the electrical power source;

a controller configured to:

determine a position of the motor control switch when the motor is initially connected to the power source by determining whether voltage is applied to the motor; and

disable normal operation of the motor if the motor control switch is in a position switching electrical power to the motor when the motor is initially connected to the power source.

58. (new) The system of Claim 57, wherein the motor is electrically connected to an AC power source and the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

59. (new) The system of claim 57, wherein the motor is electrically connected to an AC power source and the controller is further configured to fire the electronic switch at a low conduction angle when the motor is initially connected to the AC power source such that the power provided to the motor is insufficient for the motor to rotate, the controller further configured to sense zero crossing of the AC power and upon sensing a zero crossing of the AC power, determining whether the motor control switch is in the 'On" position.

60. (new) The system of claim 59 wherein the controller is configured to fire the electronic switch at the low conduction angle when the motor is initially electrically connected to the AC power source by firing the electronic switch at the low conduction angle when the controller senses zero crossing of the AC power.

61. (new) The system of Claim 57, wherein the motor is electrically connected to an AC power source and the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be in a closed position switching power to the motor when the motor is initially connected to the AC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an OFF position where it is not switching electrical power to the motor.

62. (new) The system of Claim 57, wherein the motor is electrically connected to a DC power source and the controller is further configured to switch the electronic switch at a narrow duty cycle when the motor is initially connected to the DC power source, such that the power provided to the motor is sufficient for the motor to hum but insufficient for the motor to rotate.

63. (new) The system of Claim 57, wherein he motor is electrically connected to a DC power source and the controller is further configured to:

disable normal operation of the motor when the motor control switch is determined to be a closed position when the motor is initially connected to the DC power source; and

continue to disable normal operation of the motor until the controller determines that the motor control switch has been placed in an open position.

64. (new) A system for preventing inadvertent operation of a motor driven device when a motor of the device is initially electrically connected to a power source, the system comprising:

an electronic valve configured to control power supplied to the motor when the motor is electrically connected to a power source; and

a controller configured to sense whether voltage is present across the motor when the motor is initially connected to the power source, and disable normal operation of the motor if voltage is present across the motor when the motor is initially connected to the power source.

65. (new) The system of Claim 64, wherein the motor is electrically connected to an AC power source, and wherein the controller is further configured to fire the electronic valve at a low conduction angle when the motor is initially connected to the power source, such that insufficient power for motor operation is provided to the motor.

66. (new) The system of Claim 64, wherein the electronic valve is a triac.

67. (new) The system of Claim 64, wherein the motor is electrically connected to an DC power source, and wherein the controller is further configured to switch the electronic valve at a narrow duty cycle when voltage is sensed across the motor when the motor is initially connected to the power source, such that insufficient power for motor operation is provided to the motor.

68. (new) The system of Claim 64, wherein the controller is further configured to continue to disable normal operation of the motor until the controller senses that substantially no voltage is present across the motor.

69. (new) A tool comprising:

an electric motor;

an On/Off switch for controlling the application of power to the motor;

a motor control circuit including:

a processor for sensing if a voltage is across the motor substantially upon coupling a power cord of the tool to a power source to thereby detect if the On/Off switch is engaged when power is initially applied to the tool; and

an electronic switch for regulating the application of power to the motor to prevent the application of sufficient power to the motor for the motor to startup when power is initially applied to the tool with the On/Off switch engaged, and for continuing to prevent the application of sufficient power to the motor until the On/Off switch is first released and then re-engaged.